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ART UNIT	PAPER NUMBER
2124	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/037,530	UNICE, W. KYLE
	Examiner	Art Unit
	Jason Mitchell	2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 January 2002</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to an application filed on 01/03/2002.

2.   Claims 1-25 are pending in this case.

Drawings

3.   Figure 1 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they do not include the following reference sign(s) mentioned in the

description: 'reference numeral 150' as described in par. [0022] lines 1-2. Corrected

drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office

action to avoid abandonment of the application. Any amended replacement drawing

sheet should include all of the figures appearing on the immediate prior version of the

sheet, even if only one figure is being amended. The replacement sheet(s) should be

labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to

obstruct any portion of the drawing figures. If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 'KVI Device Driver 50' in fig. 6, 'step 80' in fig. 7, and 'step 66', in fig. 8. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6.   This application contains a computer program listing of over sixty (60) lines and less than three hundred-one (301) lines within the written specification. In accordance with 37 CFR 1.96(b), a computer program listing contained on over sixty (60) lines and less than three hundred-one (301) lines, <u>must, if submitted </u>as part of the specification, be positioned at the end of the specification and before the claims. Accordingly,

applicant is required to cancel the computer program listing and either incorporate such

listing in a compact disc in compliance with 37 CFR 1.96, or insert the computer

program listing   after the detailed description of the invention but before the claims, in

the form of direct printouts from a computer's printer with dark solid black letters not less

than 0.21 cm. high, on white, unshaded and unlined paper.

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation "the module" in line 4 and again in line 5. There is

insufficient antecedent basis for this limitation in the claim. For the purpose of this

examination, examiner's best understanding will be used and 'the module' will be

assumed to indicate 'the computer program module'.

Claims 3 and 13 contain the trademark/trade names Linux and UNIX. Where a

trademark or trade name is used in a claim as a limitation to identify or describe a

particular material or product, the claim does not comply with the requirements of 35

U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App.

1982). The claim scope is uncertain since the trademark or trade name cannot be used

properly to identify any particular material or product. A trademark or trade name is

used to identify a source of goods, and not the goods themselves. Thus, a trademark or

trade name does not identify or describe the goods associated with the trademark or

trade name. In the present case, the trademark/trade name is used to identify/describe an operating system and, accordingly, the identification/description is indefinite.

Claim 6 recites the limitation "the identification data" in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of this examination, examiner's best understanding will be used and 'the identification data' will be assumed to indicate 'the version identification data'.

Claim 20 recites the limitation "the installation module" in line 1. There is insufficient antecedent basis for this limitation in the claim. For the purposes of this examination, examiner's best understanding will be used and the meaning of 'the installation module' will be taken from claims 11 and 1 which are functionally similar to the current claim and it's parent.

Claim 21 contains the trademark/trade name Linux. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe an operating system kernel and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 101

8.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3 and 9-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite a method of distributing a computer program module, steps including distributing a computer program component and distributing an installation module, but do not include an embodiment in a tangible medium such as a computer or computer readable medium, and consequently they do not provide a tangible or useful result. The claims thus recite an abstract idea, with out reciting any practical application in the technological arts. Therefore the claims only recite nonstatutory subject matter.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.   **Claims 1-4, 11-14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,303,392 to Carney et al. (Carney).**

Regarding Claims 1 and 11: Carney discloses a computer program component which includes code defining functionality associated with a computer program module (col. 2,

lines 2-3 'a utility') and excludes version identification data (col. 2, lines 2-3 'a utility ...

requests ... the symbol definition') for the module to execute the functionality under

command from a master computer program (col. 2, lines 2-3 'a utility ... requests to

open the symbol definition image file'); and an installation module (col. 1, lines 67-68

'the builder') which, when run on a computer, obtains the version identification data from

the master computer program (col. 6, lines 49-52 'the combined symbol table ...

comprise all current symbol definitions') and combines the version identification data

and the computer program component to define the computer program module (col. 7,

lines 9-12 'provides reference to this symbol definition... to the requesting utility').

In Carney's disclosed system, the modules are shown to reside on a computer system

(col. 3, lines 57-59 'a computer system that incorporates ... the present invention') and

therefore at some point must have been distributed to the system. Thus the

"distributing" as claimed, is inherent in Carney's disclosed system.

Regarding Claim 2 and 12: The rejection of claims 1 and 11 are incorporated,

respectively; further, Carney discloses the master computer program is an operating

system (col. 3, lines 45-47 'had particular applications to operating systems') and the

computer program module is a device driver (col. 2, lines 2-3 'a utility'), the master

computer program being identifiable by the version identification data (col. 6, lines 49-52

'comprise all current symbol definitions').

Regarding Claims 3 and 13: The rejections of claims 2 and 12 are incorporated,

respectively; further, Carney discloses the operating system is a UNIX operating system

(col. 2, lines 64 'UNIX system').

Regarding Claims 4 and 14: the rejections of claims 3 and 13 are incorporated, respectively; further, Carney discloses functionality included in the computer program component allows the computer program module to execute an application program interface (API) exported from the master computer Program (col. 6, lines 49-52 'the combined symbol table ... comprise all current symbol definitions ... of the operating system').

11.   **Regarding Claim 19:** the rejection of claim 13 is incorporated; further Carney discloses the device driver is dynamically loaded (col. 3, lines 43-44 'a dynamically configured operating system').

12.   **Claims 10 and 20 are rejected under 35 U.S.C. 102(b) as being unpatentable over US 5,303,392 to Carney et al. (Carney) in view of In re. Larson, Russler, and Meldahl 144 USPQ 347.**

Regarding Claims 10 and 20: The rejections of claims 1 and 11 are incorporated, respectively; further Carney discloses the installation module (col. 1, lines 67-68 'the builder') and computer program component (col. 2, lines 2-3 'a utility') as two separate objects. However, in Carney's disclosed system, they are functionally interconnected (col. 2, lines 2-3 'requests to open the symbol definition image file') and thus constitute a single object for interfacing a hardware object with an operating system (col. 1, lines 60-63 'providing access to symbol definitions'). Therefore, in Carney's disclosed system, the installation module is functionally included in the computer program component.

13.   **Claims 21-25 rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0,101,290 A1 to Lin et al. (Lin).**

Regarding Claim 21: Lin discloses defining symbols to be imported from a Linux kernel (par. [0017] lines 3-5 'recognizes the naming convention of the function calls from the kernel'), the symbols being uniquely associated with a particular version of the Linux kernel (par. [0007], lines 9-14 'A change to the source code of the kernel ... results in a change to the names of the function calls') and used by a device driver (par. [0017] lines 5-7 'the compiled service layer interacts with the compiled driver modules'); declaring structures that describe application program interfaces (APIs) to be imported from the Linux kernel for operation of the device driver (par. [0007], lines 9-14 'function calls'); obtaining the symbols that define identification data from the Linux kernel (par. [0017] lines 3-5 'the naming convention'); combine the symbols with driver code (par. [0022], lines 6-9 'the compiled service layer is linked to the compiled driver modules'); and dynamically importing the device driver in the Linux kernel (par. [0022], lines 6-9 'forming a dynamic device driver').

Regarding Claim 23: The rejection of claim 21 is incorporated; further Lin implicitly discloses function stubs for registering the device driver (par. [0020], lines 16-18 'the device driver is loaded'). In order to load the driver, some form of stub must be called.

Regarding Claim 24: The rejection of claim 21 is incorporated; further Lin discloses defining a memory structure of a particular device for which the device driver is configured (par. [0009], lines 11-13 'driver modules being specific to a hardware architecture').

Regarding Claim 25: The rejection of claim 24 is incorporated; further Lin inherently

discloses iteratively importing each symbol's kernel address and places the address into

a local variable for use by the device driver (par. [0016], lines 11-14 'a software

interface between the kernel ... and the driver modules'). To act as an interface each

function call must be linked by address to the object being interfaced.

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

15.   Claims 5-9, 15-18, 21, and 23-25 are rejected under 35 U.S.C. 103(a) as

being unpatentable over US 5,303,392 to Carney et al. (Carney)

Regarding Claim 5: The rejection of claim 3 is incorporated; further, Carney does not

explicitly disclose compiling the computer program component prior to distribution,

But does disclose the 'utilities' in the process of being executed (e.g. col. 2, lines 2-3 'a

utility ... requests to open the symbol definition image file') therefore they must have

been compiled, but it is unclear if this happened before or after distribution. It would

have been obvious to a person of ordinary skill in the art at the time of the invention to

only provide the compiled version of the utilities thus saving the user's time by avoiding

the task of compilation.

Regarding Claims 6 and 15: The rejections of claims 5 and 14 are incorporated,

respectively; further, Carney discloses obtaining version identification data (col. 6, lines

49-52 'the combined symbol table ... comprise all current symbol definitions ... of the

operating system') from the operating system and generating a version object file that

includes the identification data (col. 5, lines 12-15 'building a symbol definition file').

Regarding Claims 7 and 16: The rejections of claims 6 and 15 are incorporated,

respectively; further Carney discloses linking the version object file and the computer

program component (col. 7, lines 9-12 'provides reference to this symbol definition

image file to the requesting utility').

Regarding Claims 8 and 17: The rejections of claims 7 and 16 are incorporated,

respectively; further Carney discloses obtaining a kernel specific address of a module

list (col. 5, line 64-col. 6, line 3 'each symbol definition entry comprises ... the address

of the memory object') and passing the address to the computer program module (col.

7, lines 9-12 'provides reference to this symbol definition image file to the requesting

utility').

Regarding Claim 9: The rejection of claim 2 is incorporated; further Carney does not

explicitly disclose that the device driver is one of a printer driver, a serial port device

driver, an Ethernet device driver and a disk drive device driver, but instead refers to a

'Utility' (e.g. col. 62-65). Webopedia (www.webopedia.com) defines a utility as:

> A program that performs a very specific task, usually related to managing system
> resources. Operating systems contain a number of utilities for managing disk
> drives, printers, and other devices.

Given this definition it would have been obvious to a person of ordinary skill in the art at

the time of the invention to apply the methods disclosed in Carney to such device

drivers as those associated with printers, serial ports etc.

Regarding Claim 18: the rejection of claim 17 is incorporated; further Carney discloses

the computer program product retrieves a module list export head (col. 6, lines 7-10 'the

section index field contains a value pointing to a section header table') and imports the

required application program interfaces (APIs) ignoring the version identification data

(col. 7, lines 9-12 'provides reference to this symbol definition image file to the

requesting utility')

16.   **Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

US 2003/0,101,290 A1 to Lin et al. (Lin).

Regarding Claims 1 and 11: Lin discloses a method of distributing a computer

program module, the method including distributing a computer program component

(par. [0012], lines 1-3 'method of distributing device driver software') which includes

code defining functionality associated with the module (par [0016] line 7-9 'a set of one

or more driver modules') and distributing an installation module (par. [0016] lines 10-11

'an open source service layer') which, when run on a computer, obtains the version

identification data from the master computer program (par. [0017] lines 2-3 'configured

with respect to the kernel') and combines the version identification data and the

computer program component to define the computer program module (par. [0017] lines

5-8 'the compiled service layer interacts with the compiled driver modules').

Lin discloses the computer program component may include version identification data

(par. [0020], lines 16-18 'a pre-compiled device driver ... associated with the kernel')

however Lin also teaches that 'driver modules do not have to recognize changes to the

kernel' (par. [0017] lines 11-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention

to ignore the version of the kernel by excluding the version identification data held in the

computer program component (par. [0020], lines 16-18 'pre-compiled driver'), because

the version identification disclosed in Lin (par. [0020], lines 16-18) identifies the kernel

version, and one of ordinary skill would have been motivated to provide a driver that

would work on any version of the kernel with out disclosing proprietary information (par.

11 'preventing the disclosure of sensitive proprietary information').

Regarding Claims 2 and 12: The rejections of claims 1 and 11 are incorporated,

respectively; further Lin discloses the master computer program is an operating system

(par. [0016] lines 3-4 'an open source operating system') and the computer program

module is a device driver, (par. [0016] line 2 'dynamic device driver') the master

computer program being identifiable by the version identification data (par. [0020] lines

5-8 'standardized versions of the open source operating system').

Regarding Claims 3 and 13: The rejections of claims 2 and 12 are incorporated,

respectively; further Lin discloses the master computer program is a Linux operating

system (par [0020] lines 8-10 'As an example ... an open-source Linux operating

system').

Regarding Claims 4 and 14: The rejections of claims 3 and 13 are incorporated,

respectively; further Lin discloses the functionality included in the computer program

component allows the computer program module to execute an application program

interface (API) exported from the master computer program (par. [0019], lines 3-5

'serves and an interface between operating system kernel and device driver modules').

Regarding Claim 5: The rejection of claim 3 is incorporated; further Lin discloses

compiling the computer program component into an object file prior to distribution of the

computer program module (par. [0018] lines 11-12 'each of the device driver modules is

provided to users in executable, or compiled, format').

Regarding Claim 6 and 15: The rejections of claims 5 and 14 are incorporated,

respectively; further Lin discloses obtaining version identification data from the

operating system and generating a version object file that includes the identification

data (par. [0017] lines 2-3 'the compiled service layer is configured with respect to the

kernel').

Regarding Claims 7 and 16: The rejections of claims 6 and 15 are incorporated,

respectively; further Lin discloses linking the version object file and the computer

program component (par. [0022] lines 6-9 'compiled service layer is linked to the

compiled driver modules').

Regarding Claims 8 and 17: The rejections of claims 7 and 16 are incorporated,

respectively; further Lin inherently discloses obtaining a kernel specific address of a

module list and passing the address to the computer program module.

Lin explicitly discloses a module list (par. [0016] lines 7-9 'a set of one or more driver modules') and further discloses the computer program module having accessing the modules in the module list (par. [0019], lines 6-10 'service layer ... interfaces with proper device driver module"). In order to do this, the service layer must have knowledge of the kernel specific address of the module list.

Regarding Claim 9: The rejection of claim 8 is incorporated; further Lin does not explicitly disclose that the device driver is one of a printer driver, a serial port device driver, and ethernet device driver, and a disk drive device driver, but does disclose that a device driver 'provides the low level interface between the hardware elements of the computer system and the operating system' (par. [0002] lines 7-12). Because all of the devices claimed are represented in hardware it would have been obvious to one of ordinary skill in the art to include one of a printer driver, a serial port device driver, a ethernet device driver, and a disk drive device driver as the device drivers disclosed in Lin (par [0016] line 7-9 'a set of one or more driver modules').

Regarding Claims 10 and 20: The rejections of claims 1 and 11 are incorporated, respectively; further Lin discloses the installation module forms part of the Computer Program Component (par. [0016] lines 7-11 'The second element of the device driver is an open source service layer').

Regarding Claim 18: The rejection of claim 17 is incorporated; further Lin implicitly discloses the computer program product retrieving a module list export head and importing the required application program interfaces (APIs) and explicitly discloses ignoring the version identification data (par. [0017] lines 11-13 'driver modules do not

have to recognize changes to the kernel'). Interfacing with the device driver (par. [0019],

lines 6-10 'interfaces with the proper device driver module to complete the requested

function call') necessarily includes exporting an API from the module list (driver) and

importing that API to the service layer.

Regarding Claim 19: The rejection of claim 13 is incorporated; further Lin discloses the

device driver is dynamically loaded (par. [0022] lines 6-11 'forming a dynamic device

driver').

17.   **Claims 21 and 23-25 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over US 5,303,392 to Carney et al. (Carney) in view of the 'Linux

Home Page' as posted 12/01/2001.

Regarding Claim 21: Carney discloses defining symbols to be imported from an

operating system kernel, the symbols being uniquely associated with a particular

version of the operating system kernel (col. 3, lines 43-45 'providing access to current

symbol definitions of a ... operating system') and used by a device driver (col. 2, lines 2-

3 'a utility ... requests to open the symbol definition image file'); declaring structures that

describe application program interfaces (APIs) to be imported from the operating

system kernel for operation of the device driver (col. 5, lines 13-15 'a symbol definition

file comprising current symbol definitions of the operating system'); obtain the symbols

that define identification data from the operating system kernel (col. 6, lines 49-52 'all

current symbol definitions'); combine the symbols with driver code functionality (col. 7,

lines 9-12 'provides reference to this symbol definition image file to the requesting

utility'); and dynamically importing the device driver in the operating system kernel (col.

3, lines 43-44 'a dynamically configured operating system'). Carney does not explicitly

disclose the operating system being a LINUX system, but does disclose the use of a

UNIX system (col. 2, lines 64 'UNIX system').

On 12/01/2001 the LINUX homepage (www.linux.org) described Linux as 'a Unix-type

operating system'.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to implement Carney's invention on a LINUX system instead of a UNIX system

because one of ordinary skill in the art would have desired the ability to deploy the

invention to a broader range of operating systems.

Regarding Claim 23: The rejection of claim 21 is incorporated; further Carney

discloses use of function stubs for registering the device driver (col. 5, lines 5-7

'segment loader is used for dynamically loading the relocatable segments').

Regarding Claim 24: The rejection of claim 21 is incorporated; further Carney

discloses defining a memory structure of a particular device (col. 6, lines 62-66 'the

symbol definition image file') for which the device driver is configured (col. 6, lines 62-66

'a request from a utility').

Regarding Claim 25: The rejection of claim 24 is incorporated; further Carney

discloses iteratively importing each symbol's kernel address (col. 6, lines 49-52

'comprise all current symbol definitions') and placing the address into a local variable for

use by the device driver (col. 6, lines 1-3 'the address of the memory object').

18.   **Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,303,392 to Carney et al. (Carney) in view of US 6,298,440 B1 to Siegel (Siegel).**

Regarding Claim 22: The rejection of claim 21 is incorporated; further Carney does not explicitly disclose the programmatic data structure used to maintain the symbol table (col. 5, lines 62-63 'symbol table'), but does disclose that the symbol table can take variable forms (col. 6, lines 22-26 'symbol and string tables that are different but essentially equivalent')

Siegel teaches the use of a linked list (col. 6, lines 49-50 'linked list of resource files') in an analogous art for the purpose of referencing code resources (col. 6, lines 40-42 'used to resolve references to resources').

It would have been obvious to a person of ordinary skill to use the linked list taught by Siegel (col. 6, lines 49-50) as the data structure representing the symbol table entries disclosed in Carney (col. 5, lines 64-66 'symbol definition entries'), because one of ordinary skill would have been motivated to provide reference to the symbol definition entries (col. 6, lines 40-42).

19.   **Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0,101,290 A1 to Lin et al. (Lin) in view of US 6,298,440 B1 to Siegel (Siegel).**

Regarding Claim 22: The rejection of claim 21 is incorporated; further Lin does not explicitly disclose macros that build a linked list, but does disclose mapping kernel function calls to driver functions (par. [0019], lines 6-10 'service layer which process the function calls and interfaces with proper device driver module')

Siegel teaches the use of a linked list (col. 6, lines 49-50 'linked list of resource files') in

an analogous art for the purpose of referencing code resources (col. 6, lines 40-42

'used to resolve references to resources').

It would have been obvious to a person of ordinary skill to use the linked list taught by

Siegel (col. 6, lines 49-50) as the data structure representing the mapping between

function calls disclosed in Lin (par. [0019], lines 6-10), because one of ordinary skill

would have been motivated to provide reference to the symbol definition entries (col. 6,

lines 40-42).

Conclusion

20.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. US 5,732,282 to Provino et al. discloses a virtual device driver

registry; US 6,041,363 to Schaffer discloses an interface between an application and a

driver; US 5,991,822 to Mealey et al. discloses a static device driver using a registered

driver extension.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jason Mitchell whose telephone number is (703) 305-

0064. The examiner can normally be reached Monday through Friday 7:30am - 5:00pm

with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

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10/28/04

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